Principles of Learning and Teaching: Grades 5–9 (0523)

Sample Multiple-Choice Questions

Directions: For each question, select the best answer and mark the corresponding space on your answer sheet.

1. Students in a sixth-grade class are trying to find a way to deal with the problem of wasted food in the school lunchroom. They have invited the district director of food services to speak with the class. The students are at which of the following steps in the problem-solving process?
   (A) Develop criteria to evaluate possible solutions to the problem.
   (B) Brainstorm possible solutions to the problem.
   (C) Gather facts and information about the problem.
   (D) Develop a plan to implement the best solution to the problem.

2. In order to determine how well the students in an eighth-grade class are reading as compared to other students in the nation, a teacher should examine the results of which of the following kinds of tests?
   (A) A criterion-referenced reading test
   (B) A norm-referenced reading test
   (C) An aptitude test
   (D) An informal reading inventory

3. Which of the following instructional strategies is most commonly observed in middle-grade classes in which core subjects are integrated into the curriculum?
   (A) The teacher focuses on individualized instruction, although small groups are used more for reading than for mathematics.
   (B) The teacher is careful to prepare students for seatwork so they have opportunities to complete tasks successfully.
   (C) The teacher focuses on whole group-discussions and uses various questioning, explaining, and probing techniques.
   (D) The teacher stops and re-teaches material whenever necessary for students who do not understand the material.
4. Daryl, a sixth grader, receives a score report from a standardized mathematics test taken by his entire sixth-grade class that includes both a grade-equivalent score and a national percentile rank. Daryl’s grade-equivalent score is 8.2. His national percentile rank is 87. Daryl’s grade-equivalent score indicates that which of the following is true?

(A) Daryl did as well on his test as an average eighth-grade student in the second month of school would do on an eighth-grade test.

(B) Daryl can do the mathematics expected of an average eighth grader who is in the second month of the school year.

(C) Daryl may well encounter difficulties in the later stages of the eighth-grade mathematics curriculum.

(D) Daryl did as well on this test as an average eighth grader in the second month of school would do on the same test.

5. In Ms. Prestage’s ninth-grade English class, English is the second language for 11 of the 25 students. They represent four different language groups and have a wide range of English fluency. One of Ms. Prestage’s goals for this class is that “Students will develop speaking and listening skills, both in formal presentations and informal discussions.” To address this goal, she plans to have pairs of students interview and then introduce each other to the rest of the class. Which of the following has the potential for helping the students for whom English is a second language perform well in this activity?

(A) Presenting a model of an interview and an introduction in which a student from a previous year interviews Ms. Prestage and then introduces her

(B) Providing a set of written guidelines on conducting an interview and introducing another person

(C) Having students discuss among themselves what completing the activity successfully will require

(D) Providing a rubric by which both the interviews and the introductions will be evaluated

6. Mr. Young’s middle school students are having difficulty with a project that asks them to keep a notebook in which they record careful, systematic scientific observations and then write two possible hypotheses that could be tested on the basis of the observations. Which of the following theories might best help him understand why so many of his students are having difficulty with the project?
(A) Erik Erikson’s theory on the stages of psychological development
(B) Jerome Bruner’s theory on how information is processed
(C) Jean Piaget’s theory on the stages of cognitive development
(D) Lev Vygotsky’s theory on social learning

Questions 7 and 8 are based on the following passages.

The following passages are taken from a debate about the advantages and disadvantages of a constructivist approach to teaching.

Why constructivist approaches are effective
The point of constructivist instruction is to have students reflect on their questions about new concepts in order to uncover their misconceptions. If a student cannot reason out the answer, this indicates a conceptual problem that the teacher needs to address. It takes more than content-related professional expertise to be a “guide on the side” in this process. Constructivist teaching focuses not on what the teacher knows, but on what and how the student learns. Expertise is focused on teaching students how to derive answers, not on giving them the answers.

This means that a constructivist approach to teaching must respond to multiple different learning methods and use multiple approaches to content. It is a myth that constructivist teaching never requires students to memorize, to drill, to listen to a teacher explain, or to watch a teacher model problem-solving of various kinds. What constructivist approaches take advantage of is a basic truth about human cognition: we all make sense of new information in terms of what we already know or think we know. And each of us must process new information in our own context and experience to make it part of what we really know.

Why constructivist approaches are misguided
The theory of constructivism is appealing for a variety of reasons—especially for its emphasis on direct student engagement in learning. However, as they are implemented, constructivist approaches to teaching often treat memorization, direct instruction, or even open expression of teacher expertise as forbidden. This demotion of the teacher to some sort of friendly facilitator is dangerous, especially in an era in which there is an unprecedented number of teachers teaching out of their fields of expertise. The focus of attention needs to be on how much teachers know about the content being taught.

Students need someone to lead them through the quagmire of propaganda and misinformation that they confront daily. Students need a teacher who loves the subject and has
enough knowledge to act as an intellectual authority when a little direction is needed. Students need a teacher who does not settle for minimal effort but encourages original thinking and provides substantive intellectual challenge.

7. The first passage suggests that reflection on which of the following after a lesson is an essential element in constructivist teaching?

(A) The extent to which the teacher’s knowledge of the content of the lesson was adequate to meet students’ curiosity about the topic
(B) The differences between what actually took place and what the teacher planned
(C) The variety of misconceptions and barriers to understanding revealed by students’ responses to the lesson
(D) The range of cognitive processes activated by the activities included in the lesson design and implementation

8. The author of the second passage would regard which of the following teacher behaviors as essential for supporting student learning?

(A) Avoiding lecture and memorization
(B) Allowing students to figure out complex problems without the teacher’s intervention
(C) Emphasizing process rather than content knowledge
(D) Directly guiding students’ thinking on particular topics

Answers

1. The best answer is C. The invitation to the director of food services is an opportunity for the students to gather facts and information about the problem. There is no indication given that the students have begun to brainstorm solutions, evaluate the possible solutions, or develop an implementation plan.

2. The best answer is B. A norm-referenced reading test compares the performance of each student to the performance of a local or national norm group.

3. The best answer is C. The most common instructional strategy is one in which the teacher is facilitating whole-class discussions, asking questions, listening carefully to answers, explaining, probing, correcting, and asking more questions. Many of the questions focus on short stories or articles that the whole class has read that address more than one content area, such as science and technology, art and history. The other options are more common in elementary-grade classes.
4. The best answer is D. A grade-equivalent score is a score that compares the raw score attained on a test by the individual student to the raw score attained by the average student in the norm group for the particular test and then reports the grade and month level of that norm group comparison. In this case, Daryl’s raw score was equivalent to the average raw score of all eighth graders in the second month of school who were part of the norm group.

5. The best answer is A. When working with students whose first language is not English, teachers must keep in mind that reading, writing, listening, and speaking are all parts of language learning. Giving directions that depend on a certain level of facility in one of these areas, and then asking students to make the transfer from those directions to performance in another skill area is very demanding.

Modeling the interview allows these students to observe a variety of speaking and listening skills and to note cultural differences—for example, tone of voice and eye contact. The instructional objective is congruent with the method used to deliver the directions.

6. The best answer is C. Jean Piaget’s work supported a “stage theory” of cognitive development in which children progress from completely physical and tactile methods of understanding the environment and experience (the sensorimotor stage) to methods of understanding that allow them to understand abstract explanations and generalizations across many different kinds of experiences (the formal operational stage). Piaget’s classification of stages of developmental readiness suggests that these students may not yet have reached the readiness level to move from concrete observations (concrete operational) to abstract hypotheses (formal operational).

7. The best answer is C. Constructivist teaching depends on the connection of new information to already learned information or understandings, whether or not they are accurate. The passage says, “The point of constructivist instruction is to have students reflect on their questions about new concepts in order to uncover their misconceptions. If a student cannot reason out the answer, this indicates a conceptual problem that the teacher needs to address.” Thus, a consideration of barriers and/or misconceptions in response to the presentation of new material is an essential follow-up to a constructivist lesson.

8. The best answer is D. The second author maintains that students require teacher guidance and a direct expression of the teacher’s expert content knowledge in order to learn most effectively. Choices A (avoiding lecturing), B (learning without teacher intervention), and C (de-emphasis on content knowledge) are not consistent with this approach to teaching. Direct guidance of students’ thinking is consistent with the second author’s approach.